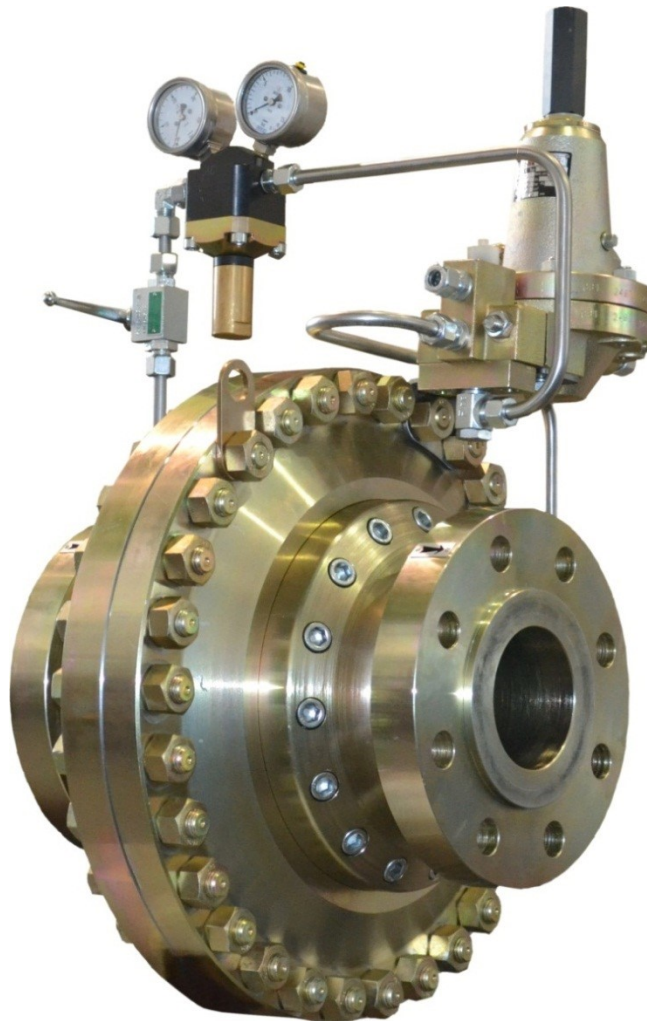


**Operating and Maintenance Instruction
GAS BACK PRESSURE REGULATOR
TYPE MF50R**



Gas Back Pressure Regulator MF50R DN/2”A150
The Experts in Energy Supply

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MF50R GAS BACK PRESSURE REGULATOR - MEGAFLOW-

Type: MF50R.612 standard

1. DESCRIPTION

The MF50R are pilot-loaded, pressure-balanced, plain-seat back pressure regulators with soft seal ring. The models MEGAFLOW - MFR can be fitted with pilots series G612.

See Bulletin G612 Pilot.

2. INSTALLATION

- a) Make sure that data on the back pressure regulator's plate are compatible with actual working conditions.
- b) Install the back pressure regulator so that its position matches the flow direction shown by the arrow.
- c) Remove safety-covers from the inlet- and the outlet-flanges.
- d) Check equipment for cleanliness.
- e) Use flanges - seals for type of gas, nominal size and pressure range.
- f) Assemble the gas back pressure regulator stressfree into the pipeline.
- g) See picture 1 to construct the process tubing.

3. START UP

- a) Slightly and very slowly open the main-inlet valve.

4. TROUBLESHOOTING

Irregular operating might also be caused by the auxiliary units, i.e. pilot G612 and the mechanism.

Consult Bulletins G612.

4.1 BACK PRESSURE REGULATOR DOES NOT OPEN

Check:

- a) Inlet gas flow.
- b) Broken regulator diaphragm.
- c) Feed to pilot.
- d) Tripped latch mechanism.

4.2 OUTLET PRESSURE DECREASES

Check:

- a) Insufficient feed flow.
- b) Demand greater than back pressure regulator capacity.
- c) Irregular pilot feed.

4.3 OUTLET PRESSURE INCREASES

CHECK:

- a) Worn seal ring (Valve seat Pos.33) or tube slide valve (Pos.5).**
- b) Worn seal ring (Actuator Pos.30).**
- c) Dirty seal ring (Valve seat Pos.33) preventing proper valve positioning.

4.4 HUNTING

Check:

- a) Insufficient gas demand.
- b) Faulty setting of inlet and outlet adjustment orifices (see pilot Bulletin G612).

4.5. FREEZING

Check:

- a) Heating.
- b) Insufficient gas demand.

5. PERIODIC CHECKS

it is recommended that the back pressure regulator, pilot and latch mechanism be checked for wear regularly.

Check if leak is coming from the back pressure regulator MF50R or pilot G612, and service.

6. MAINTENANCE

6.1 IMPORTANT

Servicing should be carried out by qualified, skilled personal. For further information, please contact our Technical Assistants Department or our authorized dealers.

Before servicing, shut off regulator inlet and outlet. Make sure there is no gas under pressure in the regulator body by closing inlet and outlet fittings. Upon completing maintenance, use soapy water to check proper sealing.

6.2 REPLACING VALVE SEAL-RING

- a) Remove all connections holding down the covers.
- b) Remove nuts (back pressure regulator Pos.21) and lift cover assembly straight up using eyelets.
- c) Unscrew pad retainer (valve seat Pos.23) and replace seal-ring (valve seat Pos.33).
- d) Check tube slide valve (actuator Pos.5). If worn or scored, use wrench to unscrew and replace.
- e) Reassemble by reversing the above steps, taking care not to damage seal (actuator Pos.36).

6.3 GENERAL MAINTENANCE

Remove all connections holding down the covers and unscrew position indicator. Mark the position of the covers with respect to valve body.

- a) To prevent release of spring (actuator Pos.11) replace the screws (actuator Pos.21) with threaded rods and nuts. Remove the remaining screws. Remove the cover and slide out spring (actuator Pos.5).
Check guide bushings (actuator Pos.28,30,38) replacing if scored or worn (see item 6.2.).
IMPORTANT: Seat tube can now move freely and could come loose. keep it in place by appropriate means.
- b) Remove screws (diaphragm-actuator Pos.19,20)
- c) Remove diaphragm-disc (Pos.8,9) and diaphragm (actuator Pos.16) replacing the latter if worn.
- d) Unscrew nuts (Gas Back Pressure Regulator Pos.21) and remove cover-pad holder assembly
IMPORTANT: As stem-pad holder assembly can work loose, fit a spacer on the slide tube.
- e) The assembly is to be set in place and secured so that axis is horizontal.
Remove pad retainer (valve seat Pos.7) and slide out the seal ring (Pos.33) assembly.
- f) Strip down all components.
- g) Clean with petrol and replace any worn or scored parts. Check guide bushings (actuator Pos.28) and pad-retainer fins (valve seat Pos.7), replacing if scored or worn (see item 6.2).
- h) Replace seal ring (valve seat Pos.33) and check seat (valve seat Pos.6) replacing if scored or worn.
- i) Check all seals and replace any, if necessary.

6.4 REASSEMBLING

Lubricate all seals with MOLYKOTE 55M and be very careful not to damage them when reassembling.

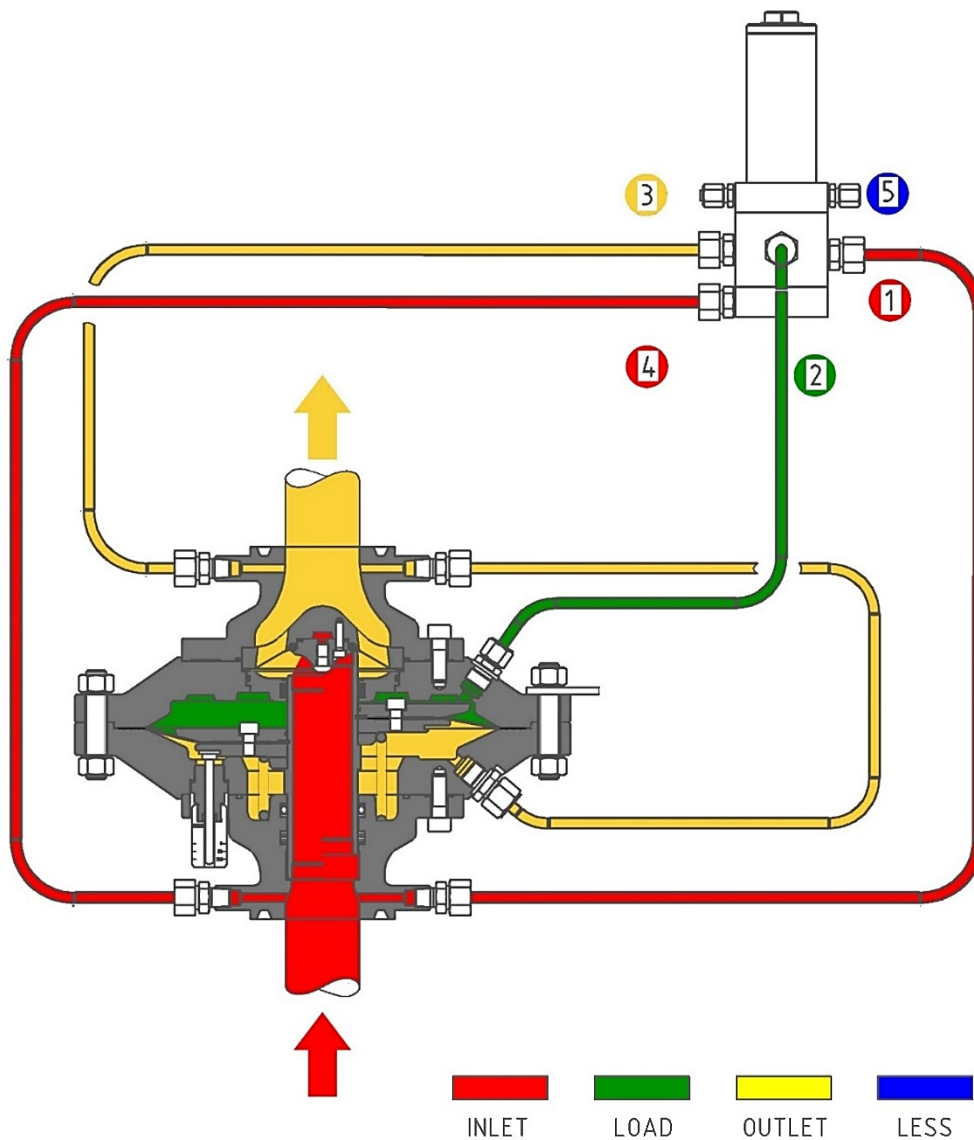
Reassemble the parts by reversing the steps in 6.3. above. As you precede make sure that's move freely and without friction.

In addition:

- a) Carefully reassemble cover-slide tube-pad holder-diaphragm plate and disk and put it back in valve body making sure not to damage seat seal surface.
- b) When tightening nuts make sure slide tube moves freely and that seal ring and seat fit properly together.
- c) When fitting top cover make sure diaphragm fits properly in its seat.
- d) Tighten all screws uniformly to ensure sealing.
- e) Re-establish all connections.

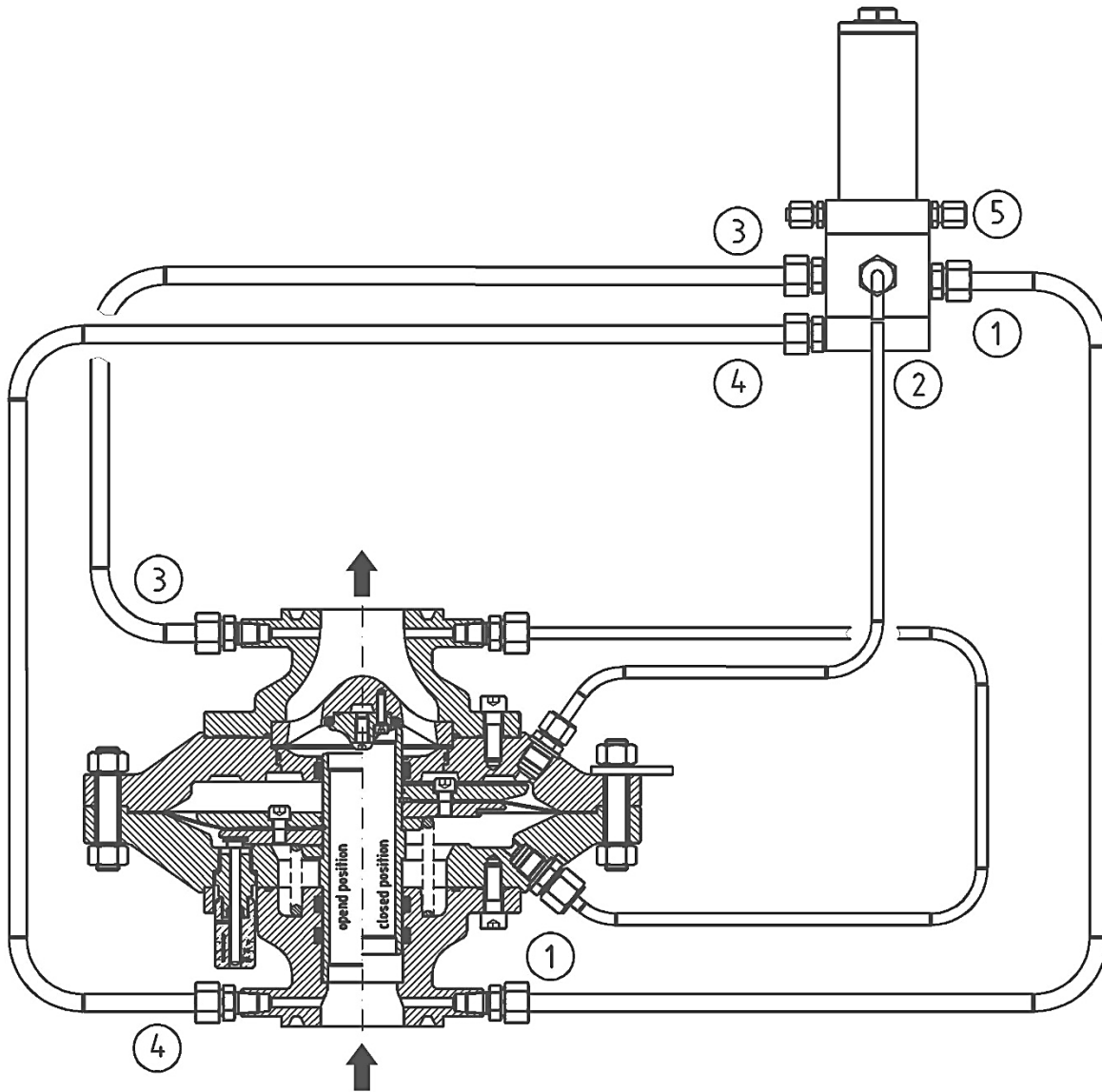
7. ADJUSTING INSTRUCTION

Carry out setting while in operating, using the pilot adjusting screw, and checking pressure on the inlet pressure gauge. A small amount of gas must flow through the regulator during setting. To do this, slightly open inlet valves.



SPARE PARTS LIST: MF50R-20-00-81

Back Pressure Regulator, pilot operated
 MF50R.1.6.G612 PN20 V50 - complete



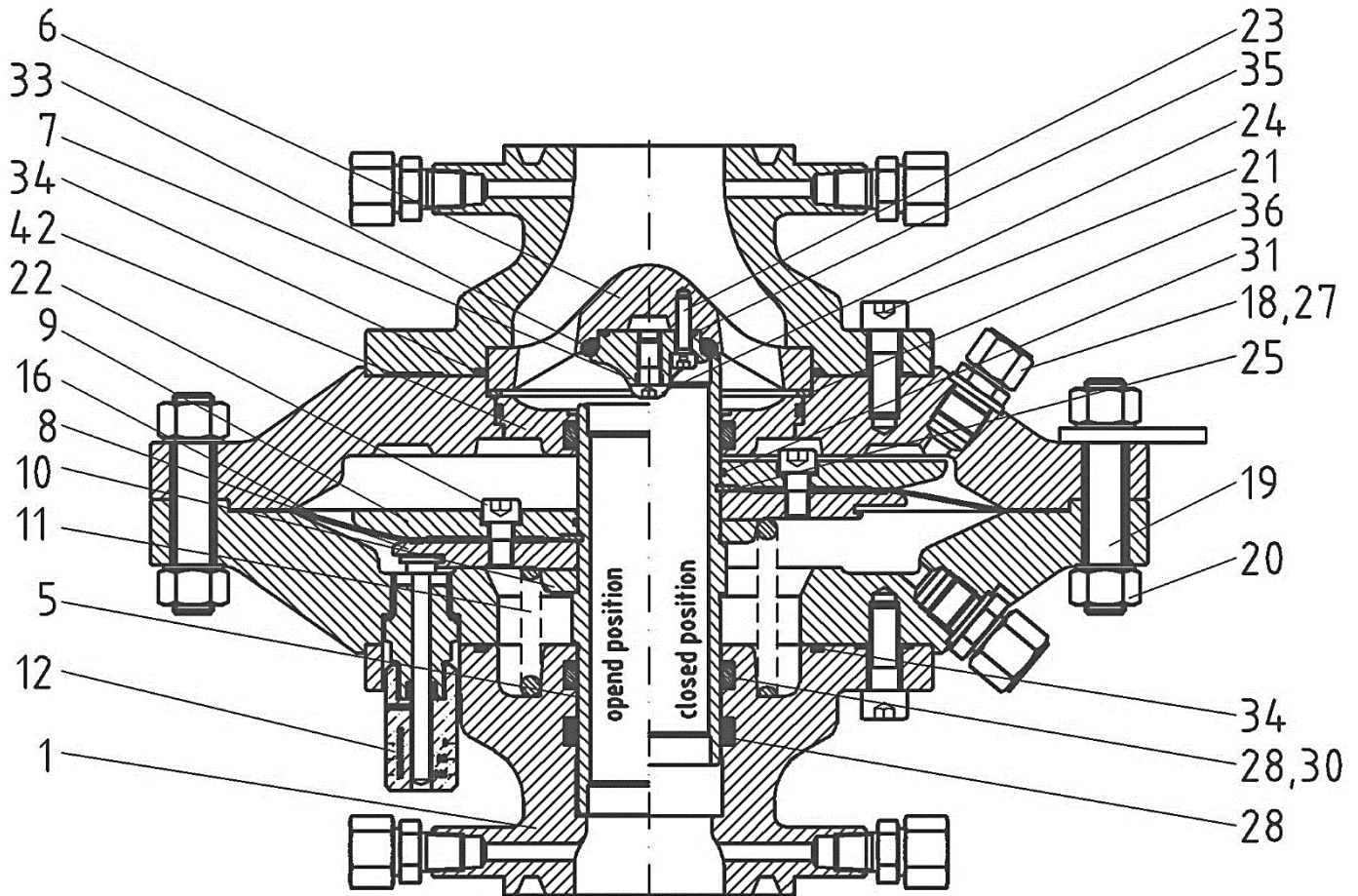
Pos	Description	Drawing	Code	Pos	Description	Drawing	Code
1	Back Pressure Regulator unit MF50R	MF50-21-00	1094929		pressure connections:		
3	Pilot-Reducer G612	61.900VA51	1094937	(1)	Inlet pressure p1		
				(2)	Setting pressure pz		
				(3)	Outflow p2		
				(4)	Measuring pressure p1		
				(5)	Vent to atmosphere		

OPERATING AND MAINTENANCE INSTRUCTION
Gas Back Pressure Regulator MF50R



SPARE PARTS LIST: MF50-21-00-81

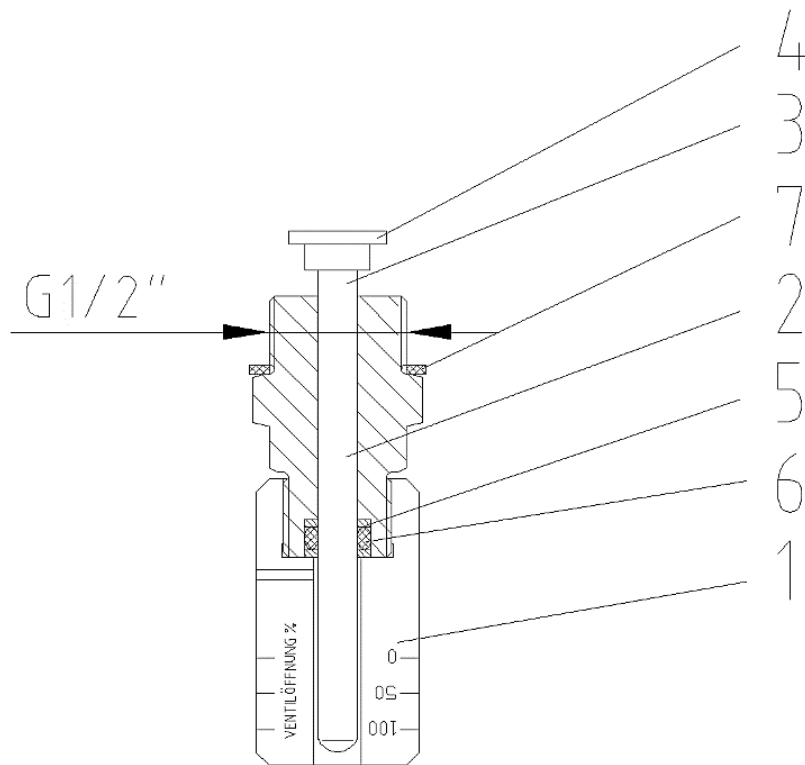
BACK PRESSURE REGULATOR UNIT V50 -complete
 MF50R- DN50/ 2" PN20 A150RTJ V50



*Seal kit
 **Diaphragm kit

Pos	Description	Drawing	Code	Pos	Description	Drawing	Code
1	Diaphragm Case complete	MF50-21-01...04		22	Cylinder Screw M8		1071532
5	Tube Slide Valve V43	MF50-21-05	1094925	23	Cylinder Screw M5		1019888
6	Valve-seat-holder	MF50-21-06	1094926	24	Screw M8		1072224
7	Pad Retainer V50	MF50-01-07	1072309	25	Safety Ring 50		1022738
8	Diaphragm Disk Part1	MF50-01-08	1072311	*27	Sealring 17		1024790
9	Diaphragm Disk Part2	MF50-01-09	1072312	*28	Guide-Bushing Ring 50		1022780
10	Spring Plate	MF50-01-10	1075699	*30	O-Ring 50		1080451
11	Spring	MF50-21-11	1094927	*31	O-Ring 50		1024735
12	Position indicator HS01	MF50-05-00	1079471	*33	O-Ring 37		1077758
**16	Diaphragm	MF50-01-16	1072322	*34	O-Ring 114		1024824
18	Unit -Screw		1080507	*35	O-Ring 29		1064123
19	Stut Bolt M14		1075582	*36	Bushing Ring 104		1080321
20	Nut M14		1073030	*42	Insert Ring		1094928
21	Cylinder Screw M10		1012224	*42.1	O-Ring 100		1024731

SPARE PARTS LIST: MF50-05-00
 POSITION INDICATOR HS01 -complete
 MF50R - V50



*Seal kit

Pos	Description	Drawing	Code	Pos	Description	Drawing	Code
1	Inspection Glass	MF50-01-14	1072320	*5	Guide Bushing Ring 6		1024829
2	Screw Joint G1/2	MF50-01-13	1071529	*6	O-Ring 6		1024828
3	Indicator Pin	MF50-01-15	1072321	*7	Seal Ring 21		1012627
4	Nut M6	56.635-003	1029406				

NOTE: In addition to this operating and maintenance manual, all relevant standards and legal provisions concerning start-up, monitoring, maintenance, repair, restart and operation applicable in the country/state in which the equipment is located must be observed

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